Claims:

1. An optical element comprising:
a refractive optical element in a first surface of a substrate;
a diffractive optical element in the first surface of the substrate, the diffractive optical element in a separate portion of the substrate than the refractive optical element, the refractive and the diffractive optical elements having been transferred into the first surface of the substrate.

2. A method of making an optical element on a first surface of a substrate already having features with a vertical dimension thereon, the method comprising:
creating a pattern for the optical element on the first surface of the substrate, in a separate portion of the substrate from the features;
providing a protective layer over the features;
transferring the pattern into the substrate using an analog etch to form the optical element, the protective layer protecting the features during said transferring; and
removing the protective layer.

3. The method of claim 2, wherein said providing the protective layer includes providing a layer more resistant to said analog etch than said pattern.

4. The method of claim 2, wherein said providing the protective layer includes providing a layer of a same material as the pattern that is thicker than the pattern.

5. The method of claim 2, wherein said providing the protective layer includes providing a layer less resistant to said analog etch than said pattern, the layer being thicker than the pattern.

6. The method of claim 2, wherein said providing the protective layer includes providing a layer having a same material as the substrate.

7. The method of claim 2, wherein said creating and providing are simultaneous.

8. The method of claim 2, wherein said creating occurs after said providing.

9. The method of claim 2, wherein said removing occurs during said transferring.

10. The method of claim 2, further comprising stabilizing the pattern.

11. The method of claim 2, wherein the features are another optical element.

12. The method of claim 11, wherein the feature is a diffractive element and the optical element is a refractive element.

13. The method of claim 12, wherein said creating the pattern for the refractive optical element includes reflowing photoresist

14. The method of claim 13, wherein the providing the protective layer includes providing a layer which maintains substantially all of its vertical dimension during said reflowing.

15. The method of claim 2, wherein said providing a protective layer includes providing a lift off layer over a region in which the optical element is to be formed, providing the protective layer over the first surface, and lifting off the protective layer in the region.

16. The method of claim 2, wherein the features are alignment features.

17. The method of claim 2, wherein the features are electro-optical elements.

18. The method of claim 2, wherein the features are metal portions.

19. The method of claim 2, wherein the features are one of dichroic portions and dielectric portions.

20. The method of claim 2, wherein said providing the protective layer includes die bonding protective portions over the features.

21. A method of making different optical element in a first surface of a substrate, the method comprising:

forming a first optical element on the first surface of the substrate;

creating a pattern for a second optical element on the first surface of the substrate, in a separate portion of the substrate from the first optical element;

providing a protective layer over the first optical element, said providing being separate from said creating;

transferring the pattern into the substrate to form the second optical element, the protective layer protecting the first optical element during said transferring; and

removing the protective layer.

22. The method of claim 21, wherein said providing the protective layer includes providing a layer more resistant to said etch than said pattern.

23. The method of claim 21, wherein said providing the protective layer includes providing a layer of a same material as the pattern that is thicker than the pattern.

24. The method of claim 21, wherein said providing the protective layer includes providing a layer less resistant to said etch than said pattern, the layer being thicker than the pattern.

25. The method of claim 21, wherein said providing the protective layer includes providing a layer having a same material as the substrate.

26. The method of claim 21, wherein said creating occurs after said providing.

27. The method of claim 21, wherein said removing occurs during said transferring.

28. The method of claim 21, further comprising stabilizing the pattern.

29. The method of claim 21, wherein the first optical element is a refractive optical element and the second optical element is a diffractive optical element.

30. The method of claim 29, wherein creating the pattern for the diffractive optical element includes coating the first surface with a photoresist.

31. The method of claim 30, wherein the providing the protective layer is achieved with said coating.

32. The method of claim 30, wherein said coating includes one of spray coating and solvent assisted coating.

33. The method of claim 21, wherein said providing the protective layer includes die bonding protective portions over the features.

34. The method of claim 21, wherein the first optical element is a diffractive optical element and the second optical element is a refractive optical element.

35. The method of claim 34, wherein said creating the pattern for the refractive optical element includes reflowing photoresist